AUTOMATED RADIUS OF CURVATURE MEASURMENTS

ABSTRACT

An interferometric system for measuring the radius of curvature of a measurement object that includes a tunable coherent radiation source capable of emitting a radiant energy beam having a characteristic wavelength and of scanning the characteristic wavelength over a range of wavelengths; an unequal path interferometer which during operation includes a reference object and the measurement object and which receives a portion of the radiant energy beam from the tunable radiant energy source and generates an optical interference pattern; a detecting system including a detector for receiving the optical interference pattern; and a system controller connected to the tunable radiant energy source and the detecting system. The controller is programmed to cause the tunable radiant energy source to scan the characteristic wavelength over the range of wavelengths while concurrently monitoring the optical interference pattern via the detecting system and further programmed to calculate the radius of curvature of a surface of the measurement object from the monitored optical interference pattern.